APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,017	01/07/2004	Kenneth W. Cowan	NUM-02402	7115

26339   7590   01/02/2008

MUIRHEAD AND SATURNELLI, LLC
200 FRIBERG PARKWAY, SUITE 1001
WESTBOROUGH, MA 01581

EXAMINER
VU, TUAN A

ART UNIT	PAPER NUMBER
2193	

MAIL DATE	DELIVERY MODE
01/02/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/754,017	COWAN ET AL.
Office Action Summary	Examiner	Art Unit	
	Tuan A. Vu	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 November 2007</u>.

2a)☐ This action is FINAL.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1, 3-4, 6-17, 19-20, 22, 24-25, 27-38, 40-41</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,3,4,6-17,19,20,22,24,25,27-38,40 and 41</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to the Applicant's response filed 11/01/07.

As indicated in Applicant's response, claims 1, 16, 19-20, 22, 37, 41 have been amended,

and claims 2, 5, 18, 21, 23, 26, 39, 42 canceled. Claims 1, 3-4, 6-17, 19-20, 22, 24-25, 27-38,

40-41 are pending in the office action.

Double Patenting

2.   The nonstatutory double patenting rejection is based on a judicially created doctrine
grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or
improper timewise extension of the "right to exclude" granted by a patent and to prevent possible
harassment by multiple assignees.   A nonstatutory obviousness-type double patenting rejection
is appropriate where the conflicting claims are not identical, but at least one examined
application claim is not patentably distinct from the reference claim(s) because the examined
application claim is either anticipated by, or would have been obvious over, the reference
claim(s). See, e.g., *In re Berg,* 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re
Goodman,* 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi,* 759 F.2d 887, 225
USPQ 645 (Fed. Cir. 1985); *In re Van Ornum,* 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re
Vogel,* 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington,* 418 F.2d 528, 163
USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may
be used to overcome an actual or provisional rejection based on a nonstatutory double patenting
ground provided the conflicting application or patent either is shown to be commonly owned
with this application, or claims an invention made as a result of activities undertaken within the
scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal
disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR
3.73(b).

3.   Claims 17, 38, and 1, 20, 22, 41 are provisionally rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over claims 18, 39, and 11, 33 of

copending Application No. 09,547,550 (hereinafter '550). Although the conflicting claims are

not identical, they are not patentably distinct from each other because of the following

observations.

Following are but a few examples as to how the certain claims from the instant invention

and from the above copending application are conflicting.

As per instant claim 17, '550 claim 18 or 39 also recites 'registering builds and storing

information of at least two builds', 'storing information in a database'... first and second builds',

, 'identifying a first and second of said builds', 'determining code volatility using said

information ... being determining ... metrics representing ... amount of code change ... between

said first build and ... second build', determining ... total number of functions... first build ...

second build' ... percentage functions added ... percentage ... functions removed ... percentage

... functions modified ...'; 'determining code volatility metric as a sum of said percentage ...

added ... removed ... modified'. '550 claim 18 does not recite 'extracting build information for

at least two builds ... about software module ... produced as an output ... compilation process ...

retrieving a portion of said build information from a database, 'performing a query ... to

determine code volatility between software modules included ... first ... and second ... said

builds'; however, '550 reciting of functions/modules being modified is indicative of modules in a

software being compiled, or previously deployed; and suggests a context by which one of

ordinary skill in the art would have found obvious that the volatility determining process by '550

would necessary extract build information (about module stored as compilation output) and use

said information by making database query to retrieve said build information related to at least

said first and second build about the functions or software module, in order to determine the '550

percentage as set forth above. Hence, the above *extracting, retrieving* and *querying* information

steps would have been obvious steps so that '550 must necessarily take in order to be able to

retrieve the needed information about the registered first and second build as recited above.

Instant claim 38 for reciting the same limitations as instant claim 17, would have deemed an obvious variant of '550 claim 18 or 39, and as set forth above, is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over '550 claim 39.

As per instant claims 1, 20, 22, and 41, these claims recite an obvious variation of the subject matter conveyed by '550 claims 11, 33, respectively, are also rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11, 33 of copending Application No. 09,547,550.

The conflicting subject matter includes: "registering ... determining module information ... during testing ... software is executed; determining first build information ... more builds registered; candidate list having ... in common with ... first build; for each candidate ... determining if executable modules ... in said first build; for each candidate ... module name that matches ... attributes not match, determining volatility metrics ... number of functions added ... removed ... modified ... candidate having module name that matched ... attributes that do not match ...first build" or an obvious variation thereof in the '550 claims. That is, in spite of the slight difference in wording, the steps of matching as a result of storing/registering information from executable module/code and from running test, extracting one or more build information in regard to said registered software module and tested modules, using a specific qualifying type of metrics is considered equivalent in both the instant claims and the '550 claims 11, 33.

This is a <u>provisional</u> obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

A person shall be entitled to a patent unless –

(a) a patent may not be obtained though the invention is not identically disclosed or
described as set forth in section 102 of this title, if the differences between the subject
matter sought to be patented and the prior art are such that the subject matter as a whole
would have been obvious at the time the invention was made to a person having ordinary
skill in the art to which said subject matter pertains. Patentability shall not be negatived
by the manner in which the invention was made.

5.   Claims 16-17, 19, 37-38, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Leblang et al, USPN: 5,574,898 (hereinafter Leblang), in view of Carver, USPN: 5,850,554

(hereinafter Carver).

As per claim 16, Leblang discloses a computer implemented method for determining a

code volatility metric, the method comprising:

extracting build information (Fig. 23-24; col. 19, lines 20-26, 27-37 by processing, for at

least two builds, one or more software modules produced using a compilation process resulting

in said one or more software modules, wherein said build information extracted includes

software module information about at least one software module produced as an output of a

compilation process (e.g. foo.o – Fig. 24; *MSG.O* – Fig. 21; *cache storage pool ... binary data* –

col. 34 lines 38-55) for each of said at least two builds;

registering said at least two builds by storing said build information corresponding to

each of said at least two builds in a database (Fig. 1; Fig. 6; Fig. 22; col. 25, line 20 to col 26,

line 52);

identifying, by retrieving at least a portion of said build information from the database, a

first and a second of said at least two builds (e.g. REL. 4.3, Release 1, Release 2, Release 3 - col.

25, line 20 to col 26, line 52; col. 20, lines 5-9);

performing a query of the database (Fig. 23-24) to determine code volatility (col. 15, line

64-67; compare – col. 21, lines 43-64; col. 23 line 29-58; Fig 13; *difference source object*

versions ... produced by a previous system build process– col. 3, lines 49 to col. 4, line 11)

between software modules included in both the first and the second of said at least two builds;

and

calculating, in response to said query, said code volatility metric using said build

information including software module information about said first and said second builds

included in the database, said code volatility metric being determined using one or more metrics

representing an amount of code change that has occurred between software modules in both said

first build and said second build (e.g. Fig. 12-13; col. 3, lines 49 to col. 4, line 11)

But Leblang does not disclose amount of code change using one or more metrics

including determining at least one of: a number of functions added, a number of functions

removed and a number of function's modified in a software module of the second build in

comparison to a software module of the first build. Retrieving a database of software module for

the purpose of a build or a release analogous to Leblang's VOBs and cache storage approach is

also used in Carver (see Carver: Fig. 5-6). Accordingly, Carver discloses reuse of object code

based on persisted version thereof in a database of object module; and rebuilding a target version

of code via code augment based on the module differences (Carver: Fig. 7) and propagate such

discrepancies via marking in conjunction with maintaining of information structure (see Fig. 6

and related text); that is, metrics are related to code change for module (e.g. code added or

substituted). Based on the object module being stored in Leblang's VOB in regard to Leblang's

audit process to create a build based upon augmenting files with respect to a previous build (col.

3, lines 49 to col. 4, line 11), it would have been obvious for one skill in the art at the time the

invention was made to enable Leblang's building process so that the difference between 2

version of software builds would include change in terms of module changed, added or removed

as taught in Carver, because just like Leblang reuse (e.g. from release to release – col. 33 lines

55-62; previously produced ... object can be reused – col. 4, lines 5-11), Carver optimize the

compiling process by using metrics about change related to functions or module of a object code,

and based thereupon, incrementally add or match only what is needed to fulfill the targeted build

as contemplated by the developer (see Carver: col. 3, line 49 to col. 35) without recreating a full

set of modules from scratch.

As per claim 17, Leblang discloses determining a total number of functions of said first

build and said second build; determining a percentage of functions added in accordance with

said total number of functions; determining a percentage of functions removed in accordance

with said total number of functions (e.g. Fig. 12-13, 15-16 – Note: code being removed,

added in *delta* record reads on a relative portion – or percent of source code functions – of the

ancestor version as set forth in the tree of stored versions) ;

determining a percentage of functions modified in accordance with said total number of

functions; and

determining said code volatility metric as a sum of said percentage of functions added,

said percentage of functions removed, and said percentage of functions modified (Note: sum of

percent or portion of code being recorded as delta reads on code volatility computed as sum of source code functions changes).

As per claim 19, Leblang discloses determining differences in a function in which a first version of a function is associated with one software module and a second version of the function is associated with a second software module, said first software module being associated with a first build, and said second software module being associated with a second build (e.g. refer to claim 16; Clearmake col. 15, lines 37 col. 16, line 16); and using checksum or function signature information (e.g. *checksum* - col. 31, lines 5-38) for determining differences.

As per claim 37, Leblang discloses a computer readable medium comprising machine executable code stored thereon for determining a code volatility metric, the computer readable medium comprising machine code for

extracting build information by processing, for at least two builds, one or more software modules produced using a compilation process resulting in said one or more software modules, wherein said build information extracted includes software module information about at least one software module produced as an output of a compilation process for each of said at least two builds;

registering said at least two builds by storing said build information corresponding to each of said at least two builds in a database;

identifying, by retrieving at least a portion of said build information from the database, a first and a second of said at least two builds;

performing a query of the database to determine code volatility between software modules included in both the first and the second of said at least two builds; and

calculating, in response to said query, said code volatility metric using said build

information including software module information about said first and said second builds

included in the database;

all of which limitations being addressed in claim 16.

But Leblang does not disclose amount of code change using one or more metrics

including determining at least one of: a number of functions added, a number of functions

removed and a number of function's modified in a software module of the second build in

comparison to a software module of the first build. However, the above limitation has been

addressed in claim 16.

As per claims 38, 40, refer to claims 17, 19, respectively.

Allowable Subject Matter

6.   Claims 1, 20, 22, 41 contain allowable subject matter pending resolution of the issues

(e.g. Double Patenting) set forth in the Office Action. The allowable subject matter revolves

about the crux of the scenario set forth via the steps of: extracting … ; registering …; executing

… ; and deriving information from said executing; querying a database (for first and second

build regarding the tested modules) and determining code volatility from said database retrieved

build and testing information in regard to said first and second build as a result of said querying

and execution.

The respective dependent claims would be allowable pending the above resolution.

Interview Summary

7.   Applicant's representative (Att. D. Muirhead) as per 12/21/07 was contacted to the effect

of discussing terms for agreeing with the Examiner regarding making some changes to the

scenario of claims 16 or 37; that is, to include a testing and a DB query to match the scenario of

claim 1, and thereby enabling the Examiner to proceed toward an issuance. But because of time

constraints, no agreement was reached.

Response to Arguments

8.   Applicants remarks submitted in the response 11/01/09 are now moot in view of the new

grounds of rejection.

Conclusion

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tuan A Vu whose telephone number is (571) 272-3735. The

examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (571)272-3756.

The fax phone number for the organization where this application or proceeding is

assigned is (571) 273-3735 (for non-official correspondence - please consult Examiner before

using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-

272-3609.

Any inquiry of a general nature or relating to the status of this application should be

directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be

obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan A Vu
Patent Examiner,
Art Unit 2193
December 30, 2007